

REMARKS:

The applicants have rewritten all claims to more particularly define the invention so as to better define the uniqueness and patentability of the invention over the prior art. The new claims are rewritten in this manner and were based upon the original claims. Claims 1-2 have been rewritten as claims 16-17; claims 3-5 have been canceled; claims 6-7 have been rewritten as claims 18-19; claims 8-10 have been canceled; claims 11-12 have been rewritten as claims 20-21 and claims 13-15 have been canceled.

The Rejection of Claims Under 35 USC § 103

Claims 1-15 were rejected over Rogers, Jr et al (US 3,984,259). The applicants request reconsideration of these rejections, as now applicable to claims 16-21 for the following reasons:

1. Rogers, Jr et al teach a process for working and heat treating an aluminum alloy that is significantly lower in alloying elements than that of the rewritten claims. The focus of our invention is the use of an improved alloy in a way previously not used. That is, impact extrusion of aluminum alloys with the high alloy content as taught in the rewritten claims is not part of Rogers, Jr et al or any other prior art.
2. Rogers, Jr et al teach an alloy that specifically contains Cr. The rewritten claims limit the grain refining elements to the group consisting essentially of Zr, Sc, Mn, Ti, Hf. While this language does not exclude Cr, it is not necessary (as it is for Rogers, Jr et al) while one of the stated group is (and not found in Rogers, Jr et al).
3. The alloy that is used by Rogers, Jr et al is required to undergo a complex heat treatment and a slow extrusion to prepare it for the impact forging process. Much of the complexity involves the desire to avoid recrystallization in the impact forge starting stock. In the current invention, recrystallization is not a factor as the mixture of alloying elements helps to limit recrystallization to a low level. That is, the starting stock of the current invention, as processed as described in the rewritten claims, is ready to be impact forged with no further complex processing.

The Rejection of Claims Due to Double Patenting

Claims 1-15 were rejected as being unpatentable over claims 1-13 of US 6,627,012 B1 (hereinafter US'012) in view of "Aluminum and Aluminum Alloys" p 262-265. The applicants request reconsideration of these rejections for the following reasons:

1. The broad category of forging as taught by the claims of US'012 does not include such steps as annealing and impact extrusion. Forging, as described in US'012 first involves heating the forging stock to an elevated temperature and then forging in an appropriate forging die. The distinction here between an elevated temperature forming process (forging as taught by US'012) and an ambient temperature forming

process (impact extrusion) is a critical one. Although "Aluminum and Aluminum Alloys" may teach that nearly all aluminum alloys can be cold extruded, the highly alloyed, high strength alloys, such as the subject of this invention, have not been impact extruded previously because it is very difficult. The alloy and method of this invention facilitates the successful cold processing by impact extrusion, that has not been taught by US'012 or any prior art.

Conclusion

For the above reasons, the applicants submit that the claims are definite and distinctly claim the subject matter of the invention and are patentable over any prior art. Therefore, the applicant submits that this application is now in condition for allowance, which action they respectfully solicit.

Conditional Request for Constructive Assistance

The applicants have amended the claims of this application so that they are proper and definite. If, for any reason this application is not believed to be in full condition for allowance, the applicants respectfully request the constructive assistance and suggestions of the Examiner in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

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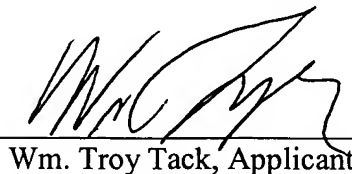
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Date 4/11/05



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